

**PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: August 24, 2021**

REGULAR X CONSENT _____ EFFECTIVE DATE _____ N/A _____

DATE: August 16, 2021

TO: Public Utility Commission

FROM: Kacia Brockman

THROUGH: Bryan Conway, JP Batmale, and Sarah Hall **SIGNED**

SUBJECT: PACIFIC POWER:
(Docket No. UM 1857)
Proposal for Phase 2 of Community Resiliency Storage Pilot.

STAFF RECOMMENDATION:

1. Approve PacifiCorp's Oregon Community Resiliency Pilot Proposal with the following conditions:
 - A. PacifiCorp must convene a stakeholder workshop to review and revise its Phase 2 research objectives, evaluation plan, and site selection criteria to provide greater clarity prior to opening the first grant application solicitation.
 - B. Costs recoverable from ratepayers for the Community Resiliency Pilot, Phase 2, shall be capped at \$1.6 million. All costs are subject to standard prudence review.
2. Amend Commission Order No. 18-327 to delete "up to four" from page four of the order.

DISCUSSION:

Issues

1. Whether to approve PacifiCorp's proposal to move forward with Phase 2 of its Community Resiliency Storage Pilot.
2. Whether to amend Commission Order No. 18-327 to delete the phrase "up to four" from page four.

Applicable Law

House Bill (HB) 2193 (2015) directed large Oregon electric companies to submit proposals to develop qualifying energy storage systems with the capacity to store at least 5 MWh of energy and required a comprehensive evaluation of the potential to store energy in the electric company's system (energy storage potential evaluation). The Commission, with substantial input from Staff and stakeholders, developed a framework and specific requirements for the electric company's system-wide energy storage potential evaluation in Order Nos. 16-504, 17-118, and 17-375.

On September 4, 2018, the Commission issued Order No. 18-327 adopting a stipulation between PacifiCorp, Staff, and the Oregon Citizens' Utility Board (CUB) (stipulating parties) that offered a path forward for two energy storage pilots, and for revisions to PacifiCorp's Energy Storage Potential Evaluation.

On July 17, 2019, the Commission issued Order No. 19-242 approving PacifiCorp's Energy Storage Potential Evaluation Plan.

Under ORS 756.568, the Commission may rescind, suspend, or amend any order, at any time, with notice to the utility and opportunity to be heard.

Analysis

In this memo, Staff first provides background on PacifiCorp's Community Resiliency Storage Pilot, then describes the Company's plan for Phase 2 of the pilot and presents Staff's review of the Company's plan, including compliance with Order No. 18-327, and finally recommends conditions for Commission approval.

Background

The Community Resiliency Pilot (Pilot) is one of two energy storage pilots PacifiCorp is carrying out according to the stipulation adopted by Commission Order No. 18-327. The Pilot explores the use of battery energy storage at facilities that provide critical services to communities during emergency response or disaster recovery.

The Pilot consists of two phases:

- Phase 1 - Technical assistance for a limited number of critical facilities resulting in feasibility studies that estimate the costs and benefits of customer-sited storage designed for resiliency; and

- Phase 2 - Project development funding resulting in the installation of battery systems at critical facilities to test the ability to stack customer and utility benefits through shared use of the batteries.

PacifiCorp proposed a total budget for both phases of \$1.8 million.¹ Under the stipulation approved by the Commission, cost recovery for Phase 1 is limited to no more than \$200,000 in prudently-incurred costs. The Commission further ordered the Company to submit an updated plan for Phase 2 for Commission approval upon completion of Phase 1.²

Phase 1 is complete. During Phase 1, PacifiCorp contracted with TRC, a third-party consultant selected through a competitive solicitation, to evaluate the technical and financial feasibility of using behind-the-meter lithium-ion battery energy storage systems to provide or supplement emergency power at critical facilities. TRC identified and recruited four critical facilities, modeled battery systems to meet each facility's resiliency goals and site constraints, and provided individual site evaluation reports to each facility. TRC compiled a Final Phase 1 Report describing the site evaluation process and lessons learned, estimating the value that behind-the-meter batteries provide to the customer, the utility, and society, and providing insights about the Oregon storage market. PacifiCorp filed the Final Phase 1 Report on December 18, 2020, in compliance with Order No. 18-327.

On February 18, 2021, PacifiCorp met with Staff and CUB, the stipulating parties, to present the results of Phase 1. On April 23, 2021, PacifiCorp shared a draft of the Company's plan for Phase 2 of the Pilot with Staff and CUB. Both parties provided informal feedback. On June 23, 2021, PacifiCorp filed the Oregon Community Resiliency Pilot Proposal describing the Company's updated plan for Phase 2 of the Pilot (Phase 2 Plan). In the stipulation, Staff agreed to make best efforts to provide a recommendation to the Commission whether to approve the updated Phase 2 Plan within 90 days of the filing.

Description of Phase 2 Plan

In Phase 2, PacifiCorp plans to continue providing the technical assistance offered in Phase 1, and also to provide grant funding to incentivize the installation of batteries at several critical facilities. PacifiCorp states that the goals of Phase 2 are to provide battery back-up power to a variety of critical facilities throughout Oregon and to uncover the benefits accrued to ratepayers, critical facilities, and battery storage vendors. The

¹ See UM 1857, PacifiCorp's Final Energy Storage Potential Evaluation and Final Storage Project Proposals, filed April 2, 2018, Oregon Energy Storage Final Project Proposal addendum, p. 64.

² See UM 1857, Order No. 18-327, September 4, 2018, p. 4.

elements of the Phase 2 Plan are described in this section. Staff's review of each element is described in the next section.

1. Technical Assistance

PacifiCorp proposes to continue to provide site evaluations to eligible critical facilities on a first come, first served basis, as in Phase 1. The evaluations will be provided by the third-party consultant at no cost to the customer. The customer will receive a site-specific report that assesses the site's critical loads, the size of battery system needed, the capital and operating costs, and the potential financial benefits to the customer.

PacifiCorp proposes a technical assistance budget of up to \$150,000 to fund up to 10 site evaluations at a cost of approximately \$15,000 each. Any unspent technical assistance funding may be made available as project development grant funding, as described below.

2. Project Development Grant Funding

PacifiCorp proposes to make project development funding available through two competitive solicitations, in Q3 2021 and Q3 2022. Grants will be awarded during Q1 of the year following each solicitation. PacifiCorp plans to develop site selection criteria with TRC prior to each solicitation. Criteria will consider likelihood of project success, amount of funding requested, and diversity of project location and facility type. Applicants may request grant funding of up to 100 percent of project cost.

In exchange for grant funding, the customer will allow PacifiCorp to actively manage a portion of the battery system during normal facility operations. PacifiCorp has experience managing behind-the-meter residential batteries in Utah. This Pilot will provide the Company with experience managing non-residential use cases.

PacifiCorp proposes a project development grant funding budget of up to \$1.3 million. The Company expects this to fund battery installations at approximately five critical facilities, based on typical battery system sizes seen in the Phase 1 evaluations and funding amounts seen in California's Small Generator Incentive Program.

3. Third-party Consultant

PacifiCorp intends to retain TRC as the third-party consultant for Phase 2 of the Pilot. The TRC contract term will be extended through the completion of Phase 2. The contract scope will be expanded to include evaluation of grant applications in addition to continuation of the technical assistance provided in Phase 1.

4. Critical Facility Eligibility

PacifiCorp proposes to expand the definition of eligible critical facility in Phase 2 to better suit the Company's rural service territory, where a corner store, for example, might serve as a de facto community space during a disaster. In Phase 1, the Company used the Federal Emergency Management Agency's definition of critical facility. Phase 2 will use California's broader definition of "Non-Residential Customers with Critical Resiliency Needs."³

5. Budget

PacifiCorp proposes a budget of up to \$1.6 million for Phase 2 activities, broken into the categories shown in the table below.

Cost category	Anticipated cost per unit	Number of units	Budget
Technical assistance	\$15,000 per report	4-10 reports	\$60,000-\$150,000
Project development grant funding	Approx. \$275,000 per grant award	Approx. 5 grant awards	\$1,210,000-\$1,300,000
Administrative costs	-	-	\$160,000
Evaluation costs	-	-	\$80,000
Total			\$1,600,000

The Company notes the following about the Phase 2 budget:

- Technical assistance will be limited to 10 site evaluations. Unused technical assistance funds will transfer to the project development grant funding budget.
- The combined budget for technical assistance and project development grant funding categories totals up to \$1.36 million, but allows for spending flexibility between the two categories.
- The company plans to cap the project development grant funding awards based on its budget cap rather than limiting the number of projects.
- Administration costs are capped at 10 percent of total Phase 2 budget. These costs include incremental staff, contract management, marketing and outreach, and third-party grant evaluation services.
- Third-party evaluation costs are estimated to be five percent of the total Phase 2 budget.

6. Cost Recovery

PacifiCorp states that it will, upon Commission approval of the Phase 2 Plan, request authorization to defer the actual Pilot costs. The Company does not propose a cost recovery mechanism at this time, but states its intent to do so in the future.

³ See PacifiCorp's Oregon Community Resiliency Proposal dated June 23, 2021, p. 6.

7. Evaluation

PacifiCorp proposes an evaluation plan that includes:

- A formal evaluation, measurement, and verification (EM&V) framework to be established prior to Phase 2 launch;
- A process evaluation after the first year to allow for mid-course corrections;
- An impact evaluation after at least 12 months of battery operation at the community resiliency centers.

Staff Review of Phase 2 Plan

Staff reviewed each element of the Phase 2 Plan for reasonableness and compliance with Order No. 18-327. Staff's findings are described below and in the next section.

1. Technical Assistance – Staff Review:

The site evaluations offered by the Pilot provide customers essential information about the technical and financial feasibility of battery systems to provide backup power at their critical facilities. The site evaluation should position a customer to apply for grant funding, whether from PacifiCorp's Phase 2 project development grant funding or from another source, to facilitate a battery system installation.

2. Project Development Grant Funding – Staff review:

Using a competitive grant rather than a fixed incentive will allow PacifiCorp to customize the grants to the needs of each project to improve the likelihood of project success, while stretching the dollars to fund as many projects as possible. Staff recommends that PacifiCorp engage Staff and stakeholders in the development of the site selection criteria for grant awards to verify alignment with the Pilot's research questions. Staff would like PacifiCorp to include in the selection criteria a battery system's ability to improve local grid operation, such as being located on a generation-limited feeder.

3. Third-party Consultant – Staff Review:

Extending TRC's contract leverages the experience from Phase 1 to economically and smoothly transition to Phase 2.

4. Critical Facility Eligibility – Staff Review:

Expanding the definition of critical facility will offer a more equitable opportunity for communities to secure funding, given that many communities in PacifiCorp's territory are small and lack an official emergency response center.

5. Budget – Staff Review:

The \$1.6 million budget proposed for Phase 2 may fund multiple projects, allowing PacifiCorp the opportunity to evaluate the ability to stack customer and utility benefits at a variety of customer facilities serving as resiliency centers. The amount is consistent

with PacifiCorp's original proposal of \$1.8 million for both phases of the Pilot, less the \$200,000 authorized by the Commission for Phase 1.

6. Cost Recovery – Staff Review:

Deferred accounting and recovery of prudently-incurred costs is typical for utility demand response and storage pilot activity authorized by the Commission. All costs are recoverable only after being subject to standard prudence review.

7. Evaluation – Staff Review:

PacifiCorp's proposed mid-term process evaluation and end-of-pilot impact evaluation appear consistent with industry norms and Staff's Pilots-to-Programs guidance.⁴ Staff finds, though, that the Phase 2 Plan's stated research objectives resemble pilot goals rather than research questions.⁵

However, PacifiCorp presents some interesting research questions in the Phase 2 Plan's section describing ratepayer benefits, shown below.

PacifiCorp will specifically seek to answer the following questions:

- What challenges are encountered interconnecting commercial scale storage control systems into the existing distributed battery grid management system?
- How do commercial load shapes alter the available capacity for utility dispatch of a storage facility as compared to residential systems?
- How do commercial rate structures that include demand charges impact the dispatch flexibility?
- Do net billing rate structures with differentiated rates for exported power limit the available capacity from commercial storage facilities?⁶

Staff finds that these are important questions that should be incorporated into the Pilot Phase 2 design and reviewed during the evaluation. The Pilot's research questions should also explore PacifiCorp's ability to use the battery system for locational grid benefits. PacifiCorp states that it will establish a formal EM&V framework prior to Phase 2 launch. Staff recommends that PacifiCorp engage Staff and stakeholders in the development of this EM&V framework to establish not only a baseline against which to

⁴ In 2020, Staff presented electric companies with guidance on designing effective pilots and transitioning successful pilots to long-term stable programs.

⁵ PacifiCorp's Oregon Community Resiliency Proposal dated June 23, 2021, p. 5, states, "PacifiCorp has established the following research objectives:

1. Ensure reduced disruption and outage minutes for critical facilities during outage events,
2. Develop a concrete understanding of the value of grid services that accrue to rate payers, and
3. Increase the number of behind-the-meter battery storage projects in Oregon."

⁶ See PacifiCorp's Oregon Community Resiliency Proposal dated June 3, 2021, p. 9-10.

measure Pilot performance, but also to prepare to answer these research questions tied to ratepayer value.

Compliance with Order No. 18-327

There are two requirements in Order No. 18-327 that warrant consideration by the Commission.

First, Order No. 18-327 states:

PacifiCorp will provide financial assistance for *up to four* energy storage installation projects that will seek to support community resiliency while also providing benefits to the utility as identified through technical assistance. (Emphasis added.)

Rather than limiting the project development grants to four installations, PacifiCorp proposes to limit grants based on the budget. PacifiCorp notified Staff in advance of filing that this proposal may be in conflict with Order No.18-327.

Staff supports PacifiCorp's request to remove the limitation of four projects. This approach will allow PacifiCorp to fund as many projects as appropriate within the budget and to consider applications from a variety of critical facility types. Staff finds that this approach will maximize learnings from the Pilot. Staff notes that the limitation of four projects in Order No. 18-327 is not included in the stipulation adopted in that order. In its original Pilot proposal, PacifiCorp suggested that its grant funding would support two to four projects. During Phase 1 of the Pilot, PacifiCorp learned that projects are likely to be smaller than originally anticipated and therefore more projects may be funded with the same budget. With the limitation of four projects removed, Staff proposes a cap on costs recoverable from ratepayers of \$1.6 million, in line with the proposed budget. All costs are subject to standard prudence review.

Second, Order No. 18-327 requires that:

The revised plan will estimate costs, benefits, and anticipated learnings associated with [the Community Resiliency Pilot].⁷

The Phase 2 Plan contains a budget that estimates Pilot costs. The Plan also includes a description of the kinds of benefits available to the critical facilities and to ratepayers, and then refers the reader to the detailed analysis of monetary benefits to facilities and

⁷ Order No. 18-327 referred to "Pilot Project #2", which PacifiCorp now calls the "Community Resiliency Pilot."

ratepayers performed by TRC and presented in the Final Phase 1 Report.⁸ Finally, the Phase 2 Plan lists anticipated learnings throughout the Plan, but lacks a clear, concise set of learning objectives, as noted above. Therefore, Staff makes two recommendations for the Commission in the following section.

Staff's Recommended Conditions

1. Allow PacifiCorp to fund more than four energy storage installation projects within the project budget, if possible, by amending Order No. 18-327.
2. Require PacifiCorp to convene a stakeholder workshop to review its Phase 2 research objectives, EM&V framework, and site selection criteria for grant awards.

Conclusion

Staff finds that PacifiCorp's Phase 2 Plan is reasonable, in the public interest, and, with adoption of the proposed conditions, in compliance with Order No. 18-327. Staff recommends approval of the Phase 2 Plan with the conditions above.

PROPOSED COMMISSION MOTION:

1. Approve PacifiCorp's Oregon Community Resiliency Pilot Proposal with the following conditions:
 - A. PacifiCorp must convene a stakeholder workshop to review and revise its Phase 2 research objectives, evaluation plan, and site selection criteria to provide greater clarity prior to opening the first grant application solicitation.
 - B. Costs recoverable from ratepayers for the Community Resiliency Pilot, Phase 2, shall be capped at \$1.6 million. All costs are subject to standard prudence review.
2. Amend Commission Order No. 18-327 to delete "up to four" from page four of the order.

⁸ See Community Resiliency Pilot Phase 1 Final Report, filed in UM 1857 on December 18, 2020.